were reviewed. CA were qualitatively assessed for ICAD and potential predisposing factors including catheter characteristics/engagement, and anatomic features of the coronary arteries. Revascularization and long-term cardiovascular outcomes were ascertained.

RESULTS Of 211 SCAD patients, 348 CA were performed, of which 248 were during SCAD hospitalization. Mean age was 52.3 ± 9.3 years, 91.9% were women, 72.5% had fibromuscular dysplasia, and 15.6% had PCI for SCAD. ICAD occurred in 3.4% of all CA, and during SCAD hospitalization in 4.5%. Of the overall incidence, 2.0% occurred during diagnostic angiography, and 1.4% during PCI of SCAD. In comparison to patients without ICAD, patients with ICAD were younger (45.7 vs. 52.7 years, p=0.009), had lower ejection fraction (50.1% vs. 56.6%, p=0.02), had higher use of guide-catheters (75% vs. 12.8%, p<0.0001), more transradial approach (50.0% vs. 16.5%, p=0.009), more deep catheter intubation (66.7% vs. 28.0%, p=0.007), and had a trend to larger catheters >6F usage (8.3% vs. 0.3%, p=0.07). Of the 12 ICAD, 11 required PCI and 3 subsequently required CABG for failed PCI. At long-term follow-up (mean 3.91 years), patients with ICAD had higher recurrent MI (41.7% vs. 15.6%, p=0.035) and revascularization (50.0% vs. 5.5%, p<0.0001).

CONCLUSIONS ICAD is not infrequent in SCAD patients undergoing CA, with incidence that appears higher than the general population, likely related to underlying arterial fragility. Angiographers should apply meticulous techniques during CA and avoid factors we identified that may increase risk of ICAD.

CATEGORIES CORONARY: Complications

KEYWORDS Dissection

TCT-387

Capability of Risk Prediction of Side Branch Occlusion When Calculating RESOLVE Score Completely With Visual Estimated Predictors

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BACKGROUND RESOLVE score is a novel score system to evaluate the risk of side branch (SB) occlusion when using single stent or provisional 2-stent technique for bifurcation intervention. The RESOLVE score contains 6 independent predictors (2 visual estimation predictors: plaque distribution and main vessel (MV) TIMI flow grade before stenting; 4 QCA predictors: pre-procedural diameter stenosis of bifurcation core, bifurcation angle, diameter ratio between MV/SB and diameter stenosis of SB before MV stenting) of SB occlusion and can help identify patients at risk for SB occlusion during bifurcation intervention with good calibration. However, it is hard to use QCA variables in real-world procedures. In the present study, we aimed to evaluate the capability of risk prediction of side branch occlusion when calculating RESOLVE score completely with visual estimated predictors (V-RESOLVE score).

METHODS The present study enrolled all the lesions (1,601 consecutive bifurcation lesions) which have been analyzed in the study for development and validation of RESOLVE score. An independent observer who is blind to previous QCA data performed visual estimation to get V-RESOLVE score. Discrimination and calibration were determined by the C-statistic. Considering the variation of visual estimation, statistical simulation of 30 different observers was performed to further validate the V-RESOLVE score. Simulated observers were set to have an average gap range from -2 to 2 (-2, -1, 0, 1, 2) with the RESOLVE score, and the standard deviation of the V-RESOLVE score was set to range from 0-5 (0, 1, 2, 3, 4, 5). Consistent with RESOLVE score, the high-risk group and non-high-risk group were divided by the lowest score in quartile IV of V-RESOLVE score. The rates of SB occlusion of the two groups were compared.

RESULTS The consistency between visual estimation and QCA analysis showed fair agreement (Weighted κ range: 0.22-0.44). The C-statistic of V-RESOLVE score was 0.76 (95%CI: 0.71 to 0.80), which is comparable to the C-statistic of RESOLVE score (0.77, 95% CI: 0.71 to 0.80). The net reclassification improvement of the RESOLVE score over the V-RESOLVE score was 15.4% (p=0.11) and the integrated discriminatory index of the RESOLVE score over the V-RESOLVE score was 0.9% (p=0.42). As for the 30 different simulated observers, the C-statistic ranges from 0.65 to 0.77, with all p<0.01. The rate of SB occlusion was significantly different between the high-risk and non-high-risk group decided by V-RESOVLE Score II (Table 1).

Table. Risk Groups Divided by RESOLVE Score and V-RESOLVE Score

		RESOLVE score	V-RESOLVE score	p
Non-High Risk Group	Range	0-9	0-11	
	Quartile	I II III	I II III	
	Rate of SB Occlusion	3.35% (39/1163)	4.32% (52/1205)	0.22
High Risk Group	Range	10-43	12-43	
	Quartile	IV	IV	
	Rate of SB Occlusion	18.04% (79/438)	16.67% (66/396)	0.60

CONCLUSIONS The V-RESOLVE score can help risk stratification of SB occlusion. There is no significant difference in discrimination and calibration between V-RESOLVE score and RESOLVE score.

CATEGORIES CORONARY: Complications

KEYWORDS Bifurcation, Risk score, Side branch occlusion

TCT-388

Predictors and Periprocedural Myocardial Injury Rate of Small Side Branches Occlusion in Coronary Bifurcation Intervention

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BACKGROUND Occlusion of small side branch (SB) may result in significant adverse clinical events. We aim to characterize the predictors of small SB occlusion and incidence of periprocedural myocardial injury (PMI) in coronary bifurcation intervention.

METHODS 925 consecutive patients with 949 bifurcation lesions (SB≤2.0mm) treated with percutaneous coronary intervention (PCI) were studied. All clinical characteristics, coronary angiography findings, PCI procedural factors and quantitative coronary angiographic analysis data were collected. SB occlusion after main vessel (MV) stenting was defined as no blood flow or any Thrombolysis in Myocardial Infarction (TIMI) flow grade decrease in SB after MV stenting. Multivariate logistic regression analysis was performed to identify independent predictors of small SB occlusion. Creatine kinase-myocardial band activity was determined by using an immunoinhibition assay and confirmed by mass spectrometry. Incidence of PMI between no SB occlusion group and SB occlusion group was compared.

RESULTS SB occlusion occurred in 86 (9.1%) of 949 bifurcation lesions. Of SB occlusion, total occlusion occurred in 64 (74.4%) lesions and a decrease in TIMI flow occurred in 22 (25.6%) lesions. True bifurcation lesion, irregular plaque, predilation in SB, preprocedural SB TIMI flow grade, preprocedural diameter stenosis of distal MV, preprocedural diameter stenosis of bifurcation core, bifurcation angle, diameter ratio between MV/SB, diameter stenosis of SB before MV stenting and MV lesion length were independent risk factors of SB branch occlusion. We observed a significantly higher incidence of PMI in each cutoff level in patients with SB occlusion compared with those without SB occlusion.

Table 1. Independent predictors of SB occlusion

Predictors	VIF	OR	95% CI	p
True bifurcation lesion	1.20	0.392	0.226-0.681	<.001
Irregular plaque	1.03	0.432	0.209-0.892	.02
Predilation in SB	1.07	0.282	0.105-0.759	.01
Preprocedural SB TIMI flow grade	1.03	1.660	1.100-2.506	.02
Preprocedural diameter stenosis of distal MV	1.07	1.012	1.002-1.022	.02
Preprocedural diameter stenosis of bifurcation core	1.56	1.021	1.010-1.033	<0.001
Bifurcation angle	1.03	1.019	1.007-1.031	0.001
Diameter ratio between MV/SB	1.15	7.077	2.937-17.051	<0.001
Diameter stenosis of SB before MV stenting	1.16	1.019	1.007-1.031	0.001
MV lesion length	1.53	0.789	0.632-0.985	0.04

VIF = Variance Inflation Factor; OR = odds ratio; CI = confidence intervals; SB = side branch; TIMI = Thrombolysis in Myocardial Infarction; MV = main vessel.

CONCLUSIONS True bifurcation lesion, irregular plaque and 8 other predictors were independent predictors of SB occlusion. Patients with small SB occlusion had significant higher incidence of PMI.

CATEGORIES CORONARY: Complications

KEYWORDS Bifurcation lesion, Predictors, Side branch occlusion